

IN THE CLAIMS:

1. – 16. (Withdrawn).

17. (Currently Amended) A sound recording arrangement comprising:
a plurality of at least three microphones that point at directions substantially on a
horizontal plane, with at least one pair of said microphones providing a sound time-of-
arrival difference of approximately 0.9msec, one additional microphone that points at a
direction that is substantially perpendicular and upward from said horizontal plane, and
another additional microphone that points at a direction that is substantially perpendicular
and downward from said horizontal plane;

means for communicating signals of said microphones to other equipment
a processor for combining selected ones of said signals of said plurality of at least
three microphones

~~The arrangement of claim 16~~ where said processor develops a modified signal
$$s'_h = s_h + \frac{1}{\sqrt{N}}(s_u + s_d),$$
 for each signal s_h of a microphone from said plurality of at least
three microphones that points at a direction that lies substantially on said horizontal
plane, where s_u is the signal of said microphone that points substantially upward relative
to said horizontal place, and said s_d is the signal of said microphone that points
substantially downward relative to said horizontal place.

18. (Withdrawn).

19. (Currently Amended) A sound recording arrangement comprising:
a plurality of at least three microphones, with at least one pair of said
microphones providing a sound time-of-arrival difference of approximately 0.9msec;
means for communicating signals of said microphones to other equipment;
where said plurality of at least three microphones comprises an odd number of
microphones that point to directions that lie substantially on a horizontal plane; and

~~The arrangement of claim 18~~ where said plurality of at least three microphones
comprises five microphones that point to directions 0° , $\pm 72^\circ$, and $\pm 144^\circ$.

a plurality of five microphones that lie substantially on a horizontal plane and point to directions 0° , $\pm 72^\circ$, and $\pm 144^\circ$, with at least one pair of said microphones providing a sound time-of-arrival difference of approximately 0.9msec; and means for communicating signals of said microphones to other equipment.

20. (Currently Amended) A sound recording arrangement comprising: a plurality of at least three microphones, with at least one pair of said microphones providing a sound time-of-arrival difference of approximately 0.9msec; means for communicating signals of said microphones to other equipment; where said plurality of at least three microphones comprises an odd number of microphones that point to directions that lie substantially on a horizontal plane; and
~~The arrangement of claim 18~~ where said plurality of at least three microphones comprises seven microphones that nominally point to directions 0° , $\pm 45^\circ$, $\pm 90^\circ$, and $\pm 150^\circ$.

21. (Original) An arrangement to reproduce sound from a plurality of channels, comprising:

an N plurality of input ports for receiving signals picked up by an N plurality of microphones, where one of said microphones points at a direction that is substantially perpendicular to and upward from a horizontal plane and picks up signal s_u , another of said microphones points at a direction that is substantially perpendicular to and downward from said horizontal plane and picks up signal s_d , and remaining N-2 of said microphones point at directions that substantially lie in said horizontal plane and pick up signals s_h^i ; and

a processor for developing signals s_h^i , $i=1, 2, \dots, N-2$, such that $s_h^i = s_h^i + \frac{1}{\sqrt{N}}(s_u + s_d)$.